



DETROIT STATE OF THE ENVIRONMENT REPORT 2007



Kwame M. Kilpatrick, Mayor

**The role of the
Department of Environmental Affairs is to**

- Conserve and protect natural resources of the city of Detroit in the interest of the health, safety and welfare of the people
- Promote improved social and economic conditions in the city and
- Protect limited environmental resources for the future benefit of city residents.

The Department is a resource for citizens to gain information about environmental issues affecting them and their communities. Community groups, teachers, and other interested citizens can be assisted in receiving educational materials regarding environmental issues such as:

- illegal dumping
- hazardous waste
- underground storage tanks
- high grass and weeds
- inoperable vehicles
- environmental rodent infestation

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Dear Citizen,

I am pleased to present our first ever State of the Environment Report. A strong and healthy environment is essential to the NEXT Detroit. Our neighborhoods must be clean, safe and livable in order for Detroit to thrive. The Department of Environmental Affairs (DEA) works diligently to ensure the city is a greener place to live, work and visit.

Downtown and commercial districts all around the city are alive. New businesses, residential, commercial and mixed-use developments are in progress all over the city. Many are on formerly contaminated sites that were cleaned through public-private partnerships. Downtown looks alive, but so do the neighborhoods. People are walking and bicycling in greenways, playing ball in newly renovated parks and shopping in local markets. I also am delighted that illegal dumping is down thanks to the vigilance of our citizens and strict code enforcement.

The state of our environment is good. While we continue to face challenges, we have made tremendous progress in eliminating the problem. We have already begun to do so in many areas, and that is something we can draw inspiration from as we look to the future. Continue to work with us as we improve the quality of our environment in Detroit.

Sincerely,



Kwame M. Kilpatrick
Mayor



Dear Friend,

In this report you will find information on the Detroit Department of Environmental Affairs and the quality of our environment. This is the first time a comprehensive picture of Detroit's environment has been taken. Much time and effort was spent trying to answer the seemingly simple question, "How is our environment doing?" To answer this question we are looking at the concepts of Smart Growth America (www.smartgrowthamerica.org). We know for Detroit to be strong we must grow in a sustainable manner.

We envision our City as the main draw for this region; a City with places to live, quality neighborhoods, and mixed-use developments that reduce the need to drive; lower taxes due to sustainable infrastructure. A City, a vibrant community with green spaces and innovative reuse projects; this is the Next Detroit that we are securing today.

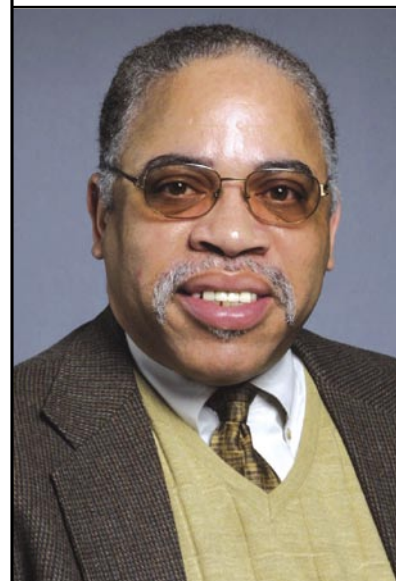
As delighted as we are, we know this report isn't perfect. We don't have ways of assessing some important facets of our environment, for example, the impact of invasive species on our rivers, our energy demands, and our carbon footprint. If you want to suggest other indicators for future years, or if you know of studies that examine key aspects of our environment, please contact us.

We are happy to report that in the last three years, Detroit and Southeast Michigan have reduced our ozone emissions. Our Ozone Action Days are down considerably and this increases our quality of life for our respiratory health.

Sincerely,



Vincent R. Nathan, PhD, MPH
Director



INTRODUCTION

Environmental Policy

The Department of Environmental Affairs (DEA) is one of six staff departments in the City of Detroit. The DEA was established in 1995 by executive reorganization and approved by voters as a staff department in the 1997 charter revision referendum.

The DEA has a broad range of responsibilities for water, land, and air resources of the city. DEA's obligations range from day-to-day environmental management systems to policy and legislation issues to conservation and compliance. It is charged with the evaluation of the reuse of contaminated property, as well as restrictions on land use. Because DEA touches so many aspects of City operations and its functions have historically been in a variety of City departments, defining DEA's purpose, roles and responsibilities has proved perplexing.

Therefore, what is required is a clear statement of environmental policy for the City. This policy statement will provide a clear message to other City departments of its importance and a coherent message on how this will be achieved along with what role DEA plays in the city at large.

Purpose and Intent

Pursuant to Article 6, Chapter 6, Sec. 6-603 of the Detroit City Code, the Department of Environmental Affairs shall develop and implement a coordinated and comprehensive environmental policy for the City. It is the intent of City Council that this article be liberally construed for the purposes of assuring that the City of Detroit is in compliance with all applicable federal, state and local environmental laws, to assure that the City of Detroit has the authority to enforce its environmental ordinances and, to the extent provided by law, federal, state and county environmental laws, rules and regulations, and to assure that the employees of the City of Detroit are adequately trained to comply with and enforce environmental laws as provided in the Code.

Thus, the Department can develop and coordinate the policy, but the implementation is a citywide effort that involves many City departments and county and state agencies that impact the city. DEA has a number of agreements with City agencies to advise and consult on environmental matters. Agreements have been reached with the Law, Planning & Development, Buildings & Safety Engineering, Public Lighting, Public Works, Health & Wellness Promotion, Police, Fire, and Administrative Hearings departments, Detroit Housing Commission, City Planning Commission and Homeland Security & Emergency Management.

Enforcement Authority

The Department of Environmental Affairs, as an authorized agent of the City of Detroit, is empowered to enforce Chapters 9 (Property Maintenance) and 22 (Solid Waste) of the City code, as well as all City, state and federal ordinances, statutes, and laws pertaining to the protection of the environment. For the purpose of enforcing environmental laws, the Department of Environmental Affairs may:



- Institute legal actions on behalf of the City of Detroit to secure compliance, recover costs, or otherwise civilly enforce federal, state, and local environmental laws
- Join with, advise and coordinate with federal and state authorities in civil or criminal proceedings to enforce federal, state and local environmental laws
- Refer criminal violations of environmental laws to federal, state or local prosecutors, as appropriate
- Serve as staff for Police Department and the Law Department in criminal proceedings brought in connection with violation of ordinances.

Compliance

The Department of Environmental Affairs shall:

- Identify all operations of the City of Detroit that require compliance with federal, state or local environmental laws
- Assume responsibility under federal, state and local environmental laws for: (a) making applications for permits; (b) filing notices and registrations; (c) responding to allegations of violations of federal, state and local environmental laws, rules and regulations; (d) instituting corrective actions to bring City of Detroit operations into compliance with federal, state and local environmental laws, rules and regulations; (e) providing for all necessary or required reports and monitoring of compliance by the City of Detroit with federal, state and local environmental laws, rules and regulations
- Monitor changes to federal, state and local environmental laws, develop positions for the City of Detroit on proposed changes to such laws, rules and regulations, and develop policies to implement changes to such rules and regulations
- Provide for appropriate public participation in compliance issues as required by federal, state and local laws or as provided for by the policies adopted by the Department of Environmental Affairs for such public participation.

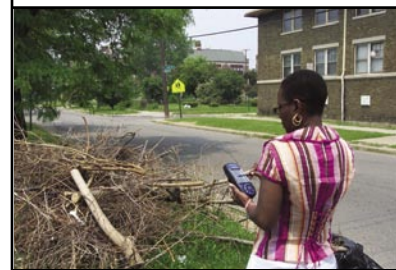
Training

The Department of Environmental Affairs shall train or arrange for the training of its employees and other employees of the City of Detroit as appropriate for the purpose of assuring that said employees are able to maintain City of Detroit operations in compliance with federal, state and local laws regarding the discharge, release, storage, handling and disposal of hazardous materials, solid waste, hazardous substances and pollutants and contaminants, and for the purpose of assuring said employees will have adequate expertise to bring or assist with enforcement actions brought under federal, state and local environmental laws.

Conservation

For the purposes of conserving land and water resources and preserving air quality, the Department of Environmental Affairs shall:

- Evaluate and assess City-owned property for compliance with environmental laws and regulations and for the protection of public health, safety and welfare
- Coordinate the reuse and redevelopment of land within the city of Detroit with City planning agencies



- Protect and conserve the Detroit River and Rouge River watersheds and other waters of the state of Michigan
- Evaluate emissions to the air to determine the impact on the environment of Detroit
- Assist state and federal agencies in the identification and eradication of non-native species of plants, animals, and other pests.

The DEA has two functional areas: environmental enforcement and environmental programs. Citizens are most familiar with environmental enforcement as it relates to illegal dumping, tall grass and weeds, and blight code violations. The other area is not as visible to citizens but is vital in ensuring a comprehensive environmental approach. Environmental programs involve work “behind the scene” to promote environmental sustainability. It is important to know harmful materials may enter our environment by land, water or air, but if they are water-soluble, the water cycle may carry them from one phase to another. Lead, which may have been historically produced at one location, has since been spread out by the wind and deposited in the soil over a wide area. Polychlorinated biphenyls (PCBs) may have been illegally dumped in a landfill and seeped into the water table and finally into a local body of water where they accumulated in sand and fish. While we do attempt to determine the origin of contaminants, the role of the DEA is

“...to conserve and protect the natural resources of the city of Detroit in the interest of the health, safety and welfare of the people, to promote improved social and economic conditions in the city and to protect limited environmental resources for the future benefit of city inhabitants (City of Detroit Municipal Code Sec. 6-602.)” To that end, we have embraced the ten essentials of environmental public health.

While the DEA embraces the essentials of environmental public health as necessary to an effective environmental approach, regulatory/statutory authority for all of these areas does not reside with the DEA. The Department is limited by statute to promote the environmental health and well-being of the city in four different areas: 1) protection, conservation, and preservation of the environment; 2) Brownfield redevelopment; 3) compliance activities of City facilities through Environmental Management Systems (EMS), operations, and code enforcement; and 4) hazardous substance management and emergency response. DEA also has the responsibility of encouraging and promoting sustainable economic development within the city of Detroit consistent with protecting the environment.

Environmental Enforcement

In the Mayor’s FY 06-07 budget, DEA maximized the use of resources assigned to code enforcement by merging the

Essentials of Environmental Public Health

1. Monitor environmental and health status to identify community environmental health problems.
2. Diagnose and investigate environmental health problems and health hazards in the community.
3. Inform, educate, and empower people about environmental health issues.
4. Mobilize community partnerships to identify and solve environmental health problems
5. Develop policies and plans that support individual and community environmental health efforts
6. Enforce laws and regulations that protect health and ensure safety
7. Link people to needed environmental health services and assure the provision of environmental health services when otherwise unavailable
8. Assure a competent environmental health workforce
9. Evaluate the effectiveness, accessibility, and quality of personal and population-based environmental health services
10. Conduct research for new insights and innovative solutions to environmental health problems and issues

DEA, the Department of Health and Wellness Promotion (DHWP), and the Department of Public Works (DPW) enforcement activities. This reorganization led to:

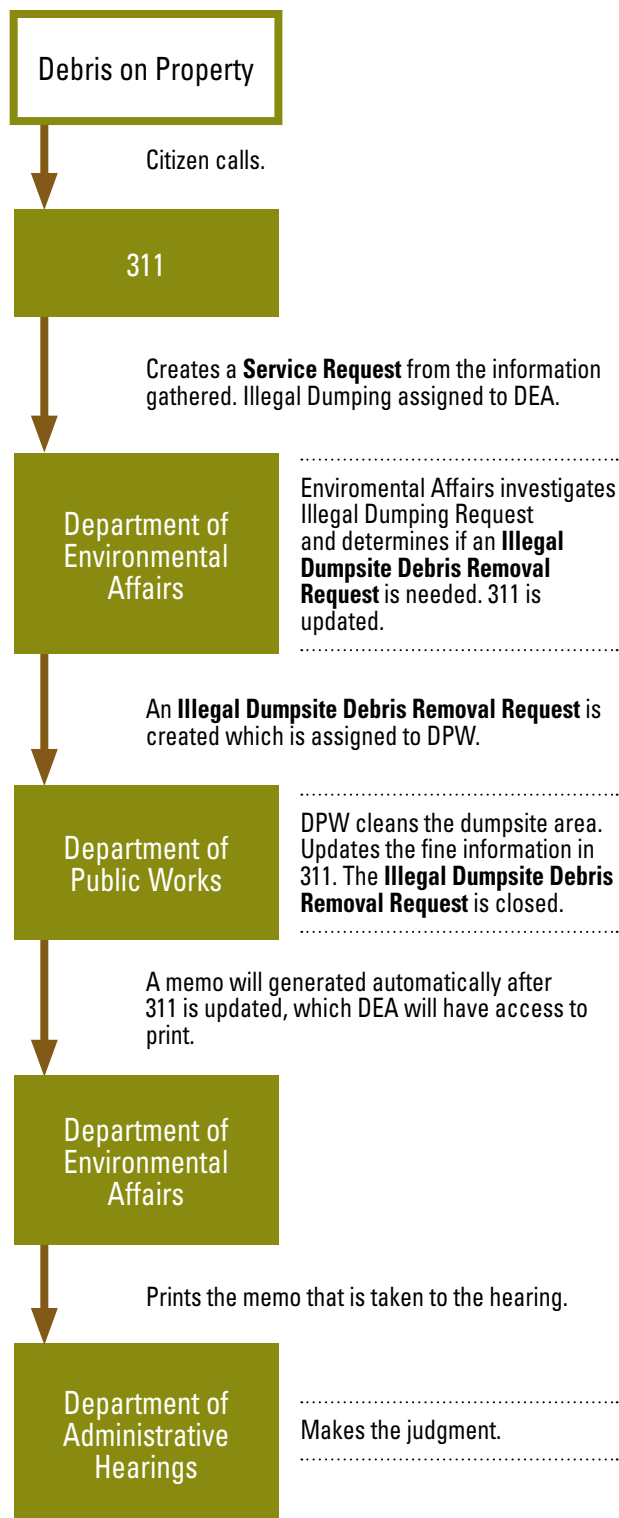
1. Increase in the number of environmental control inspectors in the field at any one time
2. Greater coverage of each cluster area
3. Decrease in the amount of time required for processing a complaint from receipt to investigation through the issuance of a violation notice.

With this change, DEA was authorized to enforce Chapter 9 (Property Maintenance Code) and Chapter 22 (Solid Waste Code) of the City Code, writing violations for things like high weeds and grass, snow and ice removal, inoperable vehicles, and rat harborage. In 2006/2007, there were 590 citations issued for tall grass and weeds. As a result of the change in the bulk trash collection policy by DPW, DEA continues to assist DPW by providing community outreach and training activities to familiarize residents with ordinance requirements on the storage, handling and transport of solid waste. The DEA also issued 3,613 violations for illegal dumpsites, of which 715 were cleared by the DPW.

A University of Michigan study and the United States Environmental Protection Agency (USEPA) estimate the direct cost of non-compliance with City of Detroit solid waste laws and regulations exceeds \$3 million annually. The indirect costs of blighted neighborhoods, loss of business, the decrease in population (which results in decreased revenues), lost days from school and work due to respiratory illnesses far exceeds this amount. In short, proper transport, storage, and disposal are fundamental to a clean, healthy, safe and economically viable Detroit.

For these reasons, the Department has made compliance with solid waste laws, rules and regulations a priority among its activities and responsibilities. When a citizen calls 311 to report illegal dumping or debris on property, computer systems allow us to retrieve the information quicker than before. Tools, such as the For A Clean Environment (FACE) interface with Administrative Hearings and Customer Service Request (CSR) with the 311 Call Center, allow us to work more efficiently to initiate, investigate and adjudicate violations, thereby

Process of Debris Removal Utilizing CSR and FACE





maximizing limited human resources. In the next phase of our clean-up initiative, the Department plans to implement a Geographical Informational System (GIS) utilizing the Global Positioning System (GPS) that will allow inspectors to enter and retrieve information in the field and prepare citations on site rather than returning to the office. This will save time, allowing inspectors to address more sites and reduce equipment maintenance costs.

The DEA investigates, educates and protects the City against rodent infestations. Through the Rodent Impact Program, neighborhoods are targeted for rodent hazard surveys, and individuals educated on ways to reduce or eliminate identified hazards. This community program educates the public on ways to reduce rodent populations through “rat-proofing” buildings and maintaining proper sanitation. In areas with persistent outdoor rodent problems, control measures are used. Environmental Control Inspectors identified and baited 1,839 properties with environmental rodent problems in 2006/2007.

Education & Outreach

DEA is a resource for citizens to gain information about environmental issues affecting their communities. Community groups, non-profit organizations, teachers, and other interested citizens can receive educational materials regarding environmental issues. The Department also provides information, leading to the compliance with local, state and federal regulations.

DEA partners with City departments, Michigan Department of Environmental Quality (MDEQ), Wayne County Department of Environment, United States Environmental Protection Agency (USEPA), as well as other agencies/organizations to ensure residents are adequately informed of the environmental issues within their neighborhoods and the corrective measures to alleviate these conditions. As a result of a partnership between the DEA and USEPA, the Community Environmental Team (CET) was formed. The CET has established a strong partnership and continually identifies community environmental concerns and builds capacity to effectively address the identified environmental issues.

The CET holds meetings annually. During these meetings, several issues are discussed ranging from air quality and solid waste to abandoned gas stations. New topics are selected by the team and are discussed every meeting. A representative specialized in the area of concern from the appropriate City department or governmental agency is requested to attend the meeting to provide information to address the concerns, and help identify potential solutions and/or actions that can be taken. The community environmental team is a self-sustainable ongoing committee that is led by DEA. As a result of the CET and the USEPA, several environmental signs have been installed throughout the city. The CET voiced concerns regarding underground storage tanks (UST) resulting in an initiative to identify and assess all USTs.



Environmental Management System

The City of Detroit has adopted an Environmental Management System to encourage City employees to reduce pollution, protect the environment and reuse materials. The DEA plays a prominent role in these activities and extends full assistance to other Departments to maintain environmental compliance in their daily operations and to ensure that the City practices good corporate stewardship.



Zoning Ordinance Related Committees & Host Community Agreements

Proposed property use applications are reviewed by relevant City Departments. DEA participates in this review process by sitting on citywide committees that carefully consider the potential environmental impact along with zoning, health and safety issues. These committees are: Industrial Review, Hazardous Waste, Solid Waste, and Flood Plain Management. The Buildings & Safety Engineering Department issues a Land Use Grant, which is the result of public hearings and reviews by the various use committees. The Grant describes how the property will be used, and states the zoning type and any special conditions that must be met. The grant provides permission for the developer to pull the actual building permits.

In addition to Land Use Grants, some facilities must also enter into a Host Community Agreement (HCA). The HCA is generally required of facilities that manage solid and/or hazardous waste. The HCA becomes an enforcement tool to ensure compliance with environmental regulations that the zoning regulations do not cover. It also establishes a means to collect fees for the amount of waste handled, thus providing income for the City.

Due Diligence /Site Preparation

The DEA works closely with other City departments, developers, contractors, and the community to promote, identify, and prepare sites for redevelopment throughout the city. DEA solicits funds from various entities and nonprofit organizations to assess and clean up contaminated sites to support redevelopment and revitalization. Most contaminated sites are vacant, blighted and/or abandoned commercial/industrial properties, also known as Brownfields.

Once a Brownfield site is identified, DEA performs a Phase I Environmental Site Assessment (ESA), to identify the historical uses of the site and identify any recognized environmental concerns (RECs). If the Phase I ESA indicates the existence of RECs, a Phase II ESA is performed, which includes soil sampling to confirm whether the soil is contaminated at levels that are harmful to people and the environment. According to the MDEQ regulations, the site would be considered a "facility" if Generic Residential Cleanup Criteria¹ is exceeded. In order to protect site activities and the surrounding community, due care measures would be taken to ensure that the existing contamination does not cause unacceptable risks or worsen prior to cleanup. DEA provides oversight on all of the above activities that pertain to City-owned sites to ensure all rules,



*Detroit East Riverfront
Redevelopment*

¹ For more information, see Act 451 of 1994 Part 201 Environmental Remediation

regulations and standards are followed. Ultimately, the site is remediated (cleaned) to prepare for redevelopment. A few examples of Brownfield site redevelopment projects managed by DEA are the Detroit East Riverfront, Southwest Detroit Public Safety Mall, Brush Park and I-94 Industrial Park, which will be discussed in further detail later in this report.

Privately-owned sites may go through a similar process through the City of Detroit Brownfield Redevelopment Authority (DBRA). The DBRA is a quasi-governmental agency with the sole mission of facilitating the reuse and redevelopment of Brownfields and obsolete properties. The DEA Director is the DBRA chairman. The DBRA encourages redevelopment by providing financial incentives for both the cleanup and redevelopment of privately-owned properties.

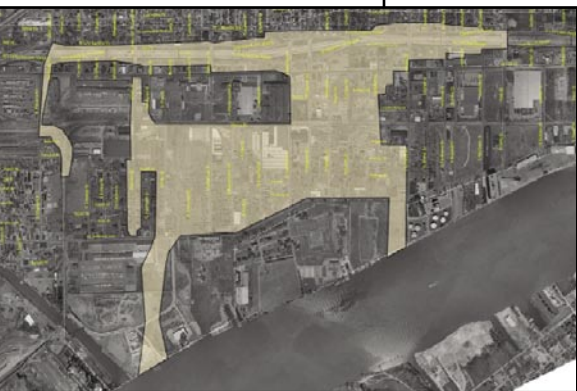
Rights-of-Entry

DEA coordinates requests from consultants and contractors for rights-of-entry into City property and City rights-of-way in order to perform environmental investigations. The coordination effort allows access to City property for due diligence activities prior to property acquisitions by prospective developers. This ensures that any contamination on City property resulting from a release or migration from neighboring property is properly identified. Restoration and redevelopment of City property can then be tracked and documented.

Project Analysis

DEA is the liaison between the City of Detroit and affiliated federal and state environmental agencies, such as the USEPA, State of Michigan, United States Coast Guard (USCG), Army Core of Engineers (ACE), and Agency for Toxic Substances and Disease Registry (ATSDR).

DEA reviews and analyzes potential project plans, Environmental Impact Statements (EIS), Brownfield Redevelopment Plans, etc. from governmental entities and developers to ensure health & safety and that the best interest of the community is preserved. DEA is currently working with the Michigan Department of Transportation on the Detroit River International Crossing (DRIC) project to ensure the safety of the community and environment is maintained during drilling and assessment activities. DEA also regularly attends community meetings regarding the DRIC project located in southwest Detroit.



*Detroit River International
Crossing Project*

Flood Plain Management

DEA manages flood plain issues for the City. This requires communication and coordination with the Federal Emergency Management Agency (FEMA). DEA is presently in discussions with FEMA regarding certain areas on the far-east side. The DEA also review development plans of individuals seeking to develop/relocate adjacent to riverfront property.

Storm Water Management

The term storm water is used to describe the rain (or snow melt) that flows from our yards, streets, parking lots, and buildings into drains, ditches, lakes or streams. On average, the metropolitan Detroit area receives nearly 32-inches of rain a year. In 2005, the City of Detroit assumed responsibility for monitoring rainfall for the metropolitan area. The City maintains 31 automated precipitation (rain and snow) gauges and five weather stations. This data is used for drainage analysis and pollution control.

In Detroit, storm water enters the drains along the street and joins with the sanitary sewer and flows to the Wastewater Treatment Plant for treatment and disposal. This system is referred to as a combined sewer system. Sometimes during heavy rainfalls, the capacity of the combined sewer system and Wastewater Treatment Plant is exceeded resulting in overflows to the Detroit and Rouge rivers. These overflows are referred to as combined sewer overflows. Combined sewer overflow is a challenge for many older cities throughout the country. The Detroit Water and Sewerage Department has designed innovative and state-of-the-art systems to ensure that the Detroit and Rouge rivers continue to be healthy and enjoyable recreation areas for the community.

The City of Detroit has developed a Storm Water Management Plan that identifies activities in place to reduce pollutants in the storm water runoff before it is discharged to the Detroit River or Rouge River. To view a copy of the plan, visit your local Neighborhood City Hall.

Emergency Response

The DEA is an active participant with the City of Detroit's Emergency Response Planning team. The Department of Emergency Management and Homeland Security leads the planning team ensuring that the well-being of the residents and visitors is maintained during emergency situations. In the event of an emergency affecting the environment, the DEA would coordinate the response and ensure appropriate clean-up procedures are followed.

The federal government established requirements that governmental units and industries must implement for the purpose of emergency planning and community right-to-know reporting on hazardous and toxic chemicals. The City of Detroit has been designated as an emergency planning district and has appointed a Local Emergency Planning Committee (LEPC) for Detroit. The committee is composed of local officials, police, fire, emergency management, public health officials, environmental, hospital, and transportation representatives, as well as representatives from facilities within the City that are subject to the emergency planning requirements, community groups, and the media.

As needed, the DEA provides assistance in responding to potentially hazardous situations including solid and hazardous waste storage, material spills, illegal dumping and clean ups. The Detroit Fire Department Hazardous Materials Response Team is responsible for responding to and cleaning up hazardous material. In 2006, the team responded to more than 100 suspected and active releases. If you suspect a hazardous material spill, call 911 immediately.



Michigan Environmental Public Health Services and Responsible Agencies

Service	Local Agency	State of Michigan
Animal Control	DHWP	MDA
Beach Monitoring	DHWP	MDCH
Building Code Enforcement	BSED, DHWP	MSHDA
Blight Violations	DEA, DAH, BSED, DPD	3rd Circuit Court
Brownfield Redevelopment	DEA, DBRA	MDEQ
Consumer Health & Safety (Indoor Air)	DHWP, DEA	MDEQ
Disease Surveillance	DHWP	MDCH
Emergency Preparedness / Emergency Response	HS/EM, DFD, DHWP, DEA	MDCH, State Police
Fish & Wildlife	No local component	MDNR
Food Protection	DHWP	MDA
Hazardous Waste	DEA	MDEQ
Industrial Discharges to Air	No local component	MDEQ
Lead Poisoning Prevention	DHWP, DEA, P&DD	MDCH, MDEQ
Occupational Health	No local component	MiOSHA
Outdoor Rodent Control	DEA	No state component
Pesticide Applications	DEA	MDA, MDEQ
School Health (Immunizations)	DHWP, DPS	MDCH, State Bd. of Ed
Solid Waste	DPW, DEA	MDEQ
Swimming Pool Regulation	DHWP	MDEQ
Water Quality/Supply (Sewage)	DWSD, DEA, DHWP	MDEQ, MDNR
Zoning	DZC	No state component
Zoonotic Diseases	DHWP	MDCH

City of Detroit: Buildings & Safety Engineering Department (BSED); Department of Administrative Hearings (DAH); Department of Environmental Affairs (DEA); Department of Health & Wellness Promotion (DHWP); Detroit Water & Sewerage Department (DWSD); Department of Public Works (DPW); Detroit Fire Department (DFD); Detroit Public Schools (DPS); Detroit Zoning Commission (DZC); Homeland Security/Emergency Management Administration (HS/EMA); Planning & Development Department (P&DD); Detroit Brownfield Redevelopment Authority (DBRA)

State of Michigan: Michigan Department of Agriculture (MDA); Michigan Department of Community Health (MDCH); Michigan Department of Environmental Quality (MDEQ); Michigan Department of Natural Resources (MDNR); Michigan Occupational Safety & Health Administration (MiOSHA); Michigan State Housing Development Administration (MSHDA)

Environmental Agenda

1. Ensure City departments operate in an environmentally sustainable manner.
2. Ensure all residential properties (land and structure) are free of heavy metal contamination.
3. Promote Brownfield sites for redevelopment.

The DEA strives to form partnerships and leverage public monies and grant funds to protect and restore our environment. We routinely partner with state and federal agencies in addition to working closely with City departments to realize our environmental agenda.

The City of Detroit and Michigan Department of Environmental Quality (MDEQ) collaborate on environmental assessments and clean-up projects in Detroit. Regular scheduled meetings, called Redevelopment of Urban Sites (REUS), are held to discuss current and future Brownfield sites, issues and initiatives related to environmental and economic redevelopment. REUS committee representatives include MDEQ, USEPA, DEA, the Detroit Economic Growth Corporation (DEGC) and the City's development departments. The REUS team has helped Detroit to

initiate dramatic redevelopment improvements, particularly in the downtown district, east riverfront, and southwest areas. The team is now focusing its efforts on neighborhood redevelopment.

DEA is committed to encouraging and promoting sustainable economic development in the city of Detroit consistent with protecting the environment. DEA works with citizens, developers, and other agencies to address environmental issues pertaining to sustainable development.

NEIGHBORHOOD LIVABILITY AND MOBILITY

The DEA in conjunction with other City departments and the business community works to improve the quality of life in Detroit neighborhoods. Some recent projects include:

Garden Resource Program

In just three years the Garden Resource Program Collaborative has grown into a thriving community organization, making use of what otherwise would be unused land. In 2007 this collaborative was made up of 220 family, 18 school and 120 community gardens. The community gardens range in size from one lot to two acres. Look for the food produced from this land at farmer's markets around the city under the Grown in Detroit label.

P&DD farming permits are down (only 6 in 2007) significantly because of programs that allow people to purchase neighboring lots for below market value.



Ash Tree Replacement

Trees are an aspect of our environment that help make our neighborhood more livable. They provide shade and reduce the urban heat island effect. The Forestry section of General Services Department has a program to remove dead Ash trees and replace them with new trees. In 2007, three hundred trees were planted through this program.

East Riverfront Redevelopment

In 2002, Mayor Kwame M. Kilpatrick directed the Detroit Economic Growth Corporation to develop the East Riverfront District Plan. The plan included a continuous public walkway adjacent to



*East Detroit Riverfront Park System
and Dequindre Cut Greenway*



the Detroit River, the first state park in Michigan's history located in an urban setting, and mixed land use (i.e. residential and commercial/retail). This endeavor reserved a minimum of 65 feet of water frontage for the construction of the RiverWalk. Two parks were already completed, but the others are reclaimed industrial sites and easements granted by private property owners.

East Detroit Riverfront Park System and Dequindre Cut Greenway

The city of Detroit has benefited from this revitalization by eliminating the potentially dangerous and hazardous substances, and blight conditions that exist within this district, whereby greatly improving the surrounding community's conditions. This includes, but is not limited to, demolishing all abandoned and vacant structures, removal of all known USTs, constructing impervious surfaces within the RiverWalk, design and construction of a new seawall, installation of public utilities and roads, and eliminating direct contact exposures. The level of cleanup conducted has reduced the public's exposure and risk to contaminated property and has allowed for the development of idled abandoned land that was prone to illegal dumping.

Dequindre Cut Greenway

DPW, in conjunction with the United States Department of Transportation, Michigan Department of Natural Resources, and the Community Foundation of Southeast Michigan, is converting what is known as the Dequindre Cut, a below street level railway corridor, into a trail for hiking and bicycling. This \$3.5-million investment will yield a 1.4-mile trail near Eastern Market to the Riverfront between Orleans and St. Aubin streets.

Connor Creek Greenway

The Connor Creek Greenway was a joint project of the Detroit East Community Collaborative and City of Detroit DPW. This project consisted of 1.5 miles of street and landscaping along Connor Avenue near City Airport to Harper. Construction cost \$1.8 million and was paid with federal transportation enhancement funds and a grant from the Community Foundation of Southeast Michigan.

Livernois Avenue Median

DPW installed a median on Livernois Avenue from McNichols Road to Eight Mile Road to decrease traffic fatalities at one of the city's deadliest intersections. This median assists walkers in crossing the street by providing a safe stopping point for persons who need additional time crossing the street, like small children and senior citizens. This median also provides a place for additional trees and greenery. At a cost of roughly \$2 million (\$1.6 million in federal funds and the balance from the City of Detroit street fund), this was the first phase of a project that is slated to go from Eight Mile Road to the Lodge Expressway.

INFRASTRUCTURE AND RESOURCE MANAGEMENT

Infrastructure is something we pay little attention to but that makes our lives possible. Infrastructure allows us to enjoy the natural resources that surround us. Infrastructure is designed to protect us and make our lives easier, but it may harm us if we do not build it in a sustainable manner.

Water Resources

The Detroit River is one of our most precious natural resources and the foundation of our past and future. We use the river as a source of drinking water, food, recreation, and commercial endeavors. Water quality is the biological, chemical, and physical conditions of a body of water. It is a measure of a body of water's ability to support beneficial and/or intended uses. The water quality of our river can be threatened by industrial/commercial misuse, the actions of individual citizens as well as natural disasters.

Surface water quality / Beach monitoring

The Department of Health and Wellness Promotion (DHWP) collects and analyzes water samples from Belle Isle Beach and neighboring sites. Data from the past several years has not resulted in a recommendation that the Recreation Department close Belle Isle Beach because of elevated bacteria counts. DHWP's position is that elevated samples from the beach, almost without exception, have resulted from birds frequenting the beach when there are few or no bathers present. Bacteria counts are universally higher on cooler overcast days when the lack of bathers allows numerous birds to congregate along the beach. Counts drop when the bathers appear, the birds leave and the river current reduces the bacteria counts.

Sewage discharges from DWSD combined sewer overflows during significant precipitation or snow melts are extremely unlikely to reach Belle Isle because of the powerful river current. The greatest threat of (human) bacterial contamination is attributed to boaters illegally dumping their sewage holding tanks up river, especially from the marinas in the area. Samples are collected at local marinas, as well as at the beach during each sampling event.

Historically many contaminants have been generated by industrial sources, yet persist and accumulate in living things necessitating clean up. Three common water contaminants are:

- Polychlorinated Biphenyls (PCBs) are a class of organic compounds that were formerly used for a variety of industrial uses. The USEPA has found PCBs to potentially cause effects similar to acute poisonings; irritation of nose, throat and gastrointestinal tracts; changes in liver function; cancer.

Since EPA banned most uses of PCBs in 1979, current levels are due mainly to the cycling of this persistent contaminant from soil to air to soil again. PCBs are also currently released from landfills, incineration of municipal refuse and sewage sludge, and illegal disposal of PCB containing materials, such as waste transformer fluid, to open areas.

Dioxins are man-made chemical compounds that enter the air through fuel and waste emissions, including motor vehicle exhaust fumes and garbage incineration. Most human exposure to dioxins occurs through the consumption of contaminated foods, especially animal fats. Dioxins may also be carried in rain and contaminate soil and watersheds. Skin rashes, liver damage, weight loss, and a reduction in the effectiveness of the immune system have all been attributed to human exposure to dioxins. Dioxins break down so slowly that some of the dioxins from past releases will still be in the environment many years from now.

When released into the air, some dioxins may be transported long distances. Because of this, dioxins are found in most places in the world. When dioxins are released into water, they tend to settle into sediments where they can be further transported or ingested by fish and other aquatic organisms. Within animals, dioxins tend to accumulate in fat.

- Mercury is a naturally occurring element found in air, water and soil. Pure mercury is a liquid metal, sometimes referred to as quicksilver. It has traditionally been used to make products like thermometers, switches, and some light bulbs.

Mercury is found in many coal containing rocks. When coal is burned, mercury is released into the environment. Coal-burning power plants are the largest human-caused source of mercury emissions to the air in the United States. Mercury in the air eventually settles into water or onto land where it can be washed into water. Once deposited, certain microorganisms can change it into methylmercury, a highly toxic form that builds up in fish, shellfish and animals that eat fish. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people.



Storm Drains

Detroit, like many old cities has one set of drains for both sewage and rain water. This system works fine most of the time. However, during periods of heavy or intense rain, this system may be overwhelmed and untreated sewerage is then released into the Detroit River. Recognizing this is a problem, the DWSD has separated rain and sanitary sewers in some areas. In these areas, storm water enters drains that flow directly to the Detroit or Rouge rivers. These areas are very sensitive and must be protected from pollution. As a rule of thumb, nothing should be dumped into any drain. Everyone has the responsibility to protect the environment including the natural resources in our area. By following a few simple rules, we can do our part to help eliminate pollution:

- Never dump anything down a storm drain!
- Only use the appropriate amount of fertilizer on your lawn or look into alternative ways to fertilize your lawn.
- Use an oil pan when changing car oil to keep the oil off the pavement.
- Bag pet waste and dispose of it in a garbage can.
- Wash your car on your lawn so that the soap and water is absorbed into the ground and does not enter the storm drain.
- Dispose of household hazardous waste at the Greater Detroit Resource Recovery Authority. Call (313) 923-2240.

Land Resources

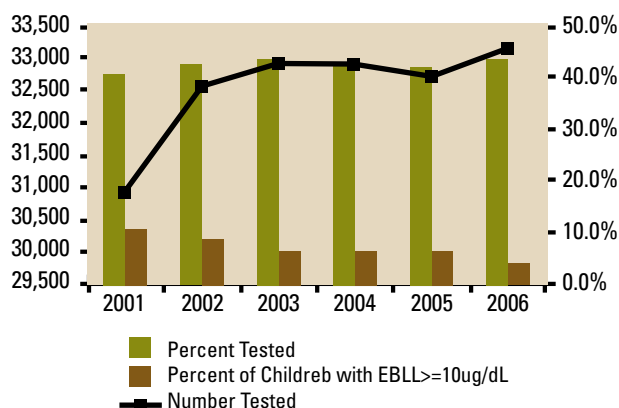
Lead Contamination

Lead is a metal found naturally in the environment as well as in manufactured products. Because of the phase out of leaded gasoline, metals processing is the major source of lead emissions to the environment. The highest levels of lead in the air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities,

and lead, acid-battery manufacturers. Although overall blood lead levels have decreased since 1976, infants and young children still have the highest blood lead levels and are at greatest risk for harmful effects. Children and others also can be exposed to lead through accidentally or intentionally eating soil or paint chips, as well as food or water contaminated with lead. High levels of lead are still a concern in Detroit. To minimize exposure to lead dust, you should:

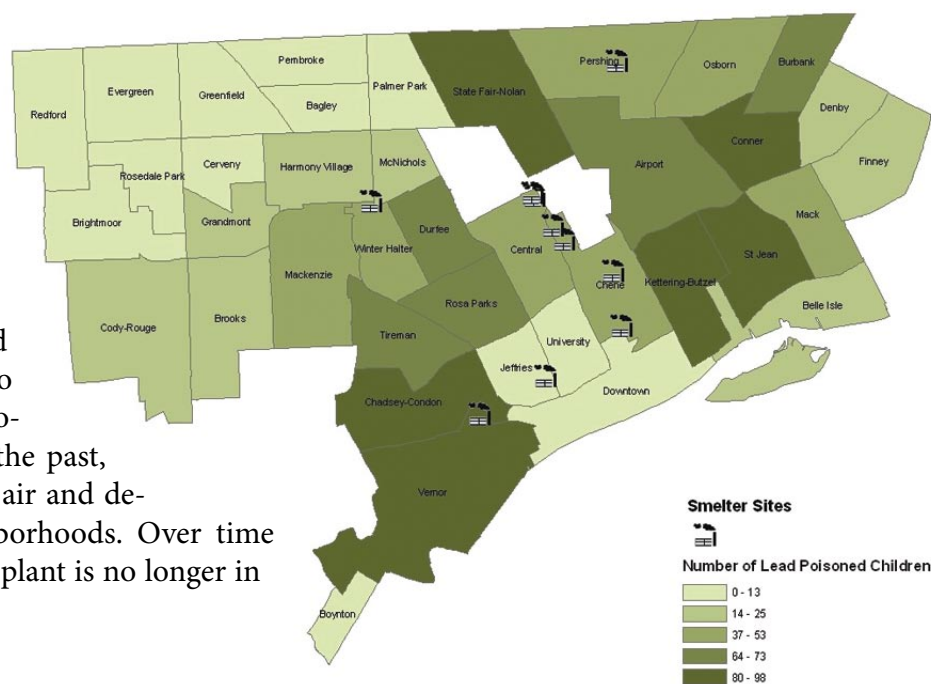
- Wash children's hands, bottles, pacifiers and toys often
- Make sure children eat healthy, low-fat foods
- Run tap water for at least one minute before using
- Regularly clean floors, windowsills, door jambs & other surfaces with disposable, wet rags
- Remove shoes before entering the house

Number and Percent of Children Tested in the City of Detroit (2001-2006) and Prevalence of Elevated Blood Lead Level 10 μ g/dL or greater
Children less than six years old



- Talk to your landlord about fixing surfaces with peeling or chipping paint.
- Take precautions to avoid exposure to lead dust when remodeling or renovating. Call 1-800-424-LEAD for guidelines.
- Call the Detroit Department of Health and Wellness Promotion at 313- 876-4212 to have your child tested.

While all industrial sites have the capacity to spoil the environment, some industries were unknowingly more harmful than others. There are an alarmingly high number of children in Detroit with elevated blood lead levels, which may be attributed to the historical location of industries that produced lead as a byproduct (Figure 1). In the past, pollution may have been released into the air and deposited in the soil of surrounding neighborhoods. Over time contaminants can build up and, even if the plant is no longer in operation, the soil may no longer be safe.



Brownfield Redevelopment

Brownfields are areas that are, or are perceived to be, contaminated. These areas may pose safety and health risks for residents, foster a sense of hopelessness, and drive up unemployment. The reuse and redevelopment of Brownfields are an essential element of the Next Detroit that results in clean and stable neighborhoods, vibrant commercial districts, and productive industrial sites.

Brownfields in Detroit may contain a variety of substances. The DEA has compiled a spatially referenced database of sampled parcels to facilitate faster identification and analysis of potential Brownfield sites.

The DBRA encourages redevelopment of environmental impacted property by providing financial incentives. Regularly scheduled meetings are advertised in the local newspapers with community members and developers normally in attendance.

Since 1995, the Detroit Brownfield Redevelopment Agency (DBRA) has recommended and the City Council has approved more than 115 Brownfield plans. Some recent Brownfield redevelopments facilitated by DEA and/or DBRA are:

- **MichCon Gas Station** — Former gasification plant owned by Detroit City Gas Company, currently known as Michigan Consolidated Gas (MichCon). The plant closed in 1945 and tax reverted to State of Michigan in 1995. An abandoned and vacant one-story brick building covers less than 1/4 of the site. The remaining space on site is littered with about 500-1,000 tires and debris. Recognized Environmental Concerns include benzene, xylene, toluene, cyanide, and PCBs. Non-hazardous debris and tires were removed by DPW. Hazardous materials removal was coordinated with MDEQ and USEPA. Site has been purchased and was developed by Coastal Produce to expand its existing fruit and vegetable distribution yard.

Detroit children less than six years with confirmed elevated blood lead levels in 2006 by subcommunity with suspected former lead smelter sites.

Source: Detroit Department of Health and Wellness Promotion, DCLPP&CP STELLAR Database 2007



- **Roselawn Site** — Former industrial dry cleaners. The 0.15-acre site is located on Roselawn Street between Chicago and Joy roads, just south of I-96 Freeway in a residential area. The property was owned by the City of Detroit and was used for parking. Two buildings have been demolished, however a concrete slab remains. A site assessment indicated that USTs remain and were allegedly filled with trichloroethylene. Removal of waste and hazardous materials totaled \$250,000.
- **Piquette Site** — Originally vacant with an abandoned building complex. The site has housed various operations since the mid-1920s including a dry cleaning, a finishing company, and a lithograph company. The building contained debris, including numerous paint cans and other small containers, as well as drums of waste. A site investigation was conducted including asbestos sampling and geophysical sampling for USTs. Sampling and REC removal cost \$400,000. The site has been sold to James Martin Cadillac dealership.
- **Ward Bakery** — Four acres former known as Ward Bakery located at the northeast corner of Toledo and West Grand Blvd. At the beginning of the cleanup, the property was a vacant lot and located in an area composed of a mixture of small industrial facilities and residential buildings. During the six years of this project, \$200,000 was spent removing concrete slabs, USTs, and above-ground storage tanks, and remediating soils contaminated with Poly Nucleated Aromatics (PNAs) and Poly Chlorinated Biphenyls (PCBs).
- **Far East Side In-Fill Housing** — An area once marked by urban decay and blight bounded by Warren and Jefferson avenues and Alter and Conner roads. Through a grant from the MDEQ, environmental assessments are being conducted on parcels to determine if any harmful substances are present. The grant further provides for the cleanup of any contaminants that are found. In the coming years, more than 3,000 new and renovated housing units will be constructed. Already, many new homes have been built and are occupied in this once blighted community.
- **St. Anne's Gate** — Ten acres in the Hubbard-Richard community were transformed into a housing development. Preston School was demolished and handled as hazardous waste because of asbestos. Remediation was performed and the following contaminants were addressed: PNA, arsenic, and PCBs; and six USTs were discovered and removed from the property.
- **Southwest Detroit Public Safety Mall/Emergency Service Center** — A total of 6.5 acres of property was consolidated for facilities for Police, Fire, and EMS to service southwest Detroit. On the site, due diligence activities, property consolidation, and mass demolition of residential, commercial, and industrial structures were conducted. The work was financed through \$199,430 in City of Detroit bonds through P&DD and managed by DEA.
- **Brush Park** — A total of 14 properties near the intersection of the I-75 Freeway and Woodward Avenue were demolished and debris removed to clear the way for a new housing development. A historical review of the property use was conducted and a Phase II ESA was performed on one parcel because it was once a dry cleaners. In total \$1 million were spent on the demolition and cleanup of this site. The Woodward Place Crosswinds Community stands on this site.
- **I-94 Industrial Park** — Parcels making up 153 acres near Mt. Elliott and Huber

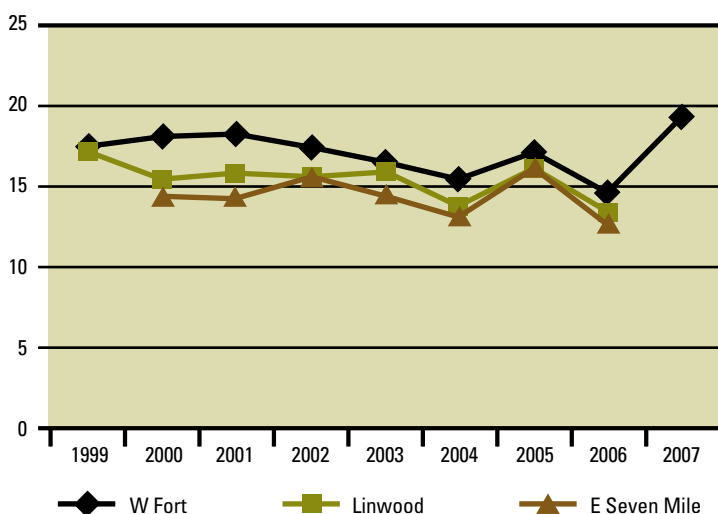
were developed into a light industrial park (e.g., auto manufacturing, storage, trucking, part suppliers, etc.). This development included due diligence activities, property consolidation, and mass demolition of residential, commercial, and industrial structures. More than \$1 million from the Michigan Site Reclamation Grant, managed by DEA/P&DD, were used.

Air Resources

We don't often think of the air we breathe as a resource, but it is in fact one third of our natural environment. Air surrounds us and provides us with the oxygen vital for survival. Air pollution is the presence of one or more substances or physical conditions in high enough concentrations that interfere with the health and welfare of humans, animals or vegetation. There are six common air pollutants: particle pollution, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. Of the six pollutants, particulate matter pollution and ground-level ozone are the greatest threat to our health.

Ground level ozone and particulate matter have come under scrutiny as stimuli of asthma exacerbations. Children with asthma are particularly at risk for the adverse health effects associated with air pollutants including PM and O₃. Approximately 14.3% of children have asthma as diagnosed by a physician, while 14.3% children have undiagnosed asthma.

**Annual Mean Particulate Matter
2.5 Concentrations**



There are six common air pollutants: particle pollution, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. Of the six pollutants, particle pollution and ground-level ozone are the greatest threat to our health.

■ Ozone (O₃) is a gas composed of three oxygen atoms. In the Earth's lower atmosphere, ground-level ozone is considered bad and is the primary constituent of smog. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents, as well as natural sources, help to form ozone.

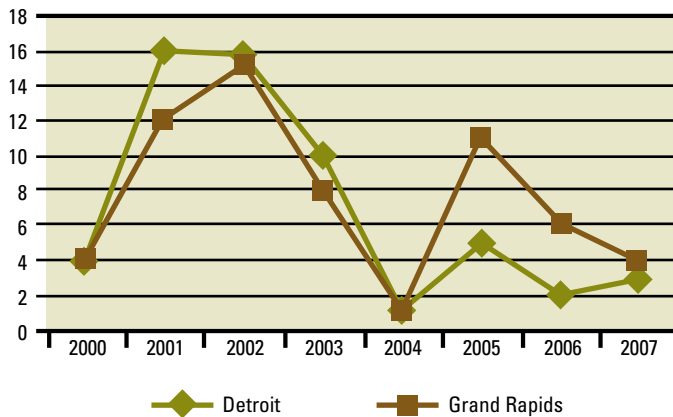
■ Nitrogen oxides (NO_x) form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.

Particulate matter is a complex mixture of extremely small particles and liquid droplets. Of concern are particles that are 2.5 micrometers or smaller in diameter because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects.

■ Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. Carbon monoxide can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. CO is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide.

■ Sulfur dioxide (SO₂) gases are formed when fuel containing sulfur, such as coal and oil, is burned, and when gasoline is extracted from oil, or metals are extracted from ore. SO₂ contributes to respiratory illness, particularly in children and the elderly, and aggravates existing heart and lung diseases.

Ozone Action Days Trend 200-2007



Asthma hospitalization rates for children in Detroit are more than three times the statewide average (Michigan Department of Community Health 2002).

In an effort to cut down on vehicle emissions, the City of Detroit strives to operate its fleet in an environmentally sustainable manner. Through a grant with the USEPA, 97 DPW vehicles were retrofitted to reduce their emissions in 2005. In that same year, DPW instituted a no idling policy to further reduce pollution. This reduces emissions by almost one ton per year.

Since 2004, DDOT has been using ultra low sulfur diesel and installed exhaust filters to reduce particulate matter emissions.

Under a joint effort, the MDEQ provided CSX with \$23,500 for horsepower reduction technology on one of its switchyard locomotives. Installation of this equipment will result in reduced diesel emissions from the retrofitted locomotive, including a reduction in diesel particulate matter and nitrogen oxides. These switchyards primarily include the Dearborn, Livernois, and River Rouge yards.

NEXT STEPS

Our environment is ours. As we work to improve it, it is important to stop and measure our progress. So far we have recognized there are some challenges and we are beginning to address them.

Through past ignorance, willful neglect or lack of viable alternatives, areas of our city have become Brownfields. Through public-private partnerships, many of these areas have been rehabilitated and are in use again. Businesses and industry see the potential of many sites and are perusing tax and infrastructure benefits that only Detroit can offer. DEA and DBRA are working with interested parties to streamline this complicated process.

Moving forward we are striving to implement principles of sustainable development to mediate past damage and improve our environment. This report will be used as a baseline for future reports. Our next steps will include:

- Conducting audits of all City departments to determine exactly how City operations impact our environment
- Developing a waste reduction campaign targeted at commercial businesses
- Working with DWSD to build additional large underground holding reservoirs to minimize combined sewerage overflows during periods of heavy precipitation
- Creating a household hazardous waste recycling campaign.

DETROIT



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2008**

**The National
Brownfields
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brownfields2008.org

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